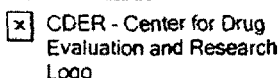


9

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# EXHIBIT 9

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## Pharmacy Compounding

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### Survey of Drug Products Compounded by a Group of Community Pharmacies: Findings from a Food and Drug Administration Study

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#### Introduction

##### Objectives:

- Gather information about quality, purity, and potency of marketed compounded drug products.
- Assist FDA in developing a regulatory strategy for compounded drug products.



#### Background

##### Definition of Compounding:

Combining, mixing, or altering of ingredients by a licensed pharmacist to create a customized drug (e.g. removal of a dye due to patient allergy, conversion to a different dosage form for ease of administration) for a patient based on the receipt of a valid prescription or in anticipation of prescriptions based on an order history from pharmacist-physician-patient relationship. Excludes: mixing, reconstituting, or other acts in accordance with directions in FDA approved labeling.

- Compounding drugs are a significant share of market.  
Rx's for compounded products is ~250 million/yr (Estimated 1-8% of total prescriptions)
- Some compounders are high volume operations.  
An estimated 658 of ~72,000 pharmacies fill over 13 million compounded Rx's/yr (i.e., <1 % of pharmacies control 5% of compounding market)

##### Examples of significant adverse effects caused by compounded drugs.

- One child died following administration of imipramine oral liquid which was compounded at 5x the prescribed strength.
- Unilateral blindness in a patient following administration of pharmacy-prepared, non-sterile

indomethacin eyedrops.

- Eight cases of meningitis, including three deaths, from compounded betamethasone injections which were contaminated.
- The Food, Drug & Cosmetic Act requires that all drugs, including compounded drugs, meet requirements for strength, purity, and quality.



## Study Methodology

### Samples:

- 12 Pharmacies

Selected based on ability to order over the internet

- 29 Samples

Selected based on their common use and potential health risk if improperly compounded.

### Tests:

- USP or (A)NDA method used

- "Fail" denotes a failure in an original and check analysis

Product	Form	Concentration	Pharmacy	Comment
<b>Injectables-Tests: Sterility, ID/Assay, Endotoxin(LAL), Particulates</b>				
Alprostadil	8x 5.5 ml vial	20 ug/ml	H	Fail-LAL
Betamethasone	12x 5 ml vial	3 mg/ml	A	Fail-Assay
Dipyridamole	30x 12 ml vial	5 mg/ml	E	
Dipyridamole	30x 10 ml vial	5 mg/ml	F	
Droperidol	4x 10 ml vial	5 mg/ml	A	
Hyaluronidase	20x 1 ml vial	150 U/vial	D	
Hyaluronidase	10x 1 ml vial	150 U/vial	K	Fail-Assay
Iron Dextran	30x 2 ml vial	50 mg/ml	F	
Iron Dextran	10x 2 ml vial	50 mg/ml	F	
Papavarine HCl	4x 10 ml vial	30 mg/ml	A	Fail-Assay
Progesterone	4x 10 ml vial	50 mg/ml	D	Fail-Assay
Progesterone	4x 10 ml vial	50 mg/ml	L	
TriMix	4x 10 ml vial	17.65 mg/ml	I	
<b>Pellet Implants-Tests: Sterility, ID/Assay, Release Rates</b>				
Estradiol	30x Pellet	25 mg	D	
Estradiol	30x Pellet	25 mg	I	
<b>Ophthalmics-Tests: Sterility, ID/Assay, pH</b>				
Atropine SO4	4x 15 ml	1%	G	
Atropine SO4	4x 15 ml	1%	J	
Betaxolol	4x 15 ml	0.125%(PF)	G	
Carbocol	4x 15 ml	0.01% (PF)	G	
Ciprofloxacin	4x 10 ml	0.3% (PF)	G	Fail-Assay
Ciprofloxacin	4x 10 ml	0.3% (PF)	J	
Dexamethasone	4x 5 gr	0.05%	G	
Dexamethasone	4x 15 ml	0.1%	J	Fail-Assay
Timolol maleate	4x 15 ml	0.25%	G	Fail-Assay
<b>Inhalation-Tests: Microbial Limits, ID/Assay, Contaminants</b>				
Tobramycin	112x 5 ml	50 mg/ml	E	Fail-Assay
<b>Oral-Tests: ID/Assay, Content Uniformity, Dissolution</b>				
Progesterone	180x Capsule	200 mg/Sust Rel	I	
Estradiol	180x Tablet	2 mg	B	
Progesterone	180x Capsule	300 mg/in oil	I	Fail-Assay, C
Progesterone	180x Capsule	100 mg/micr oil	M	

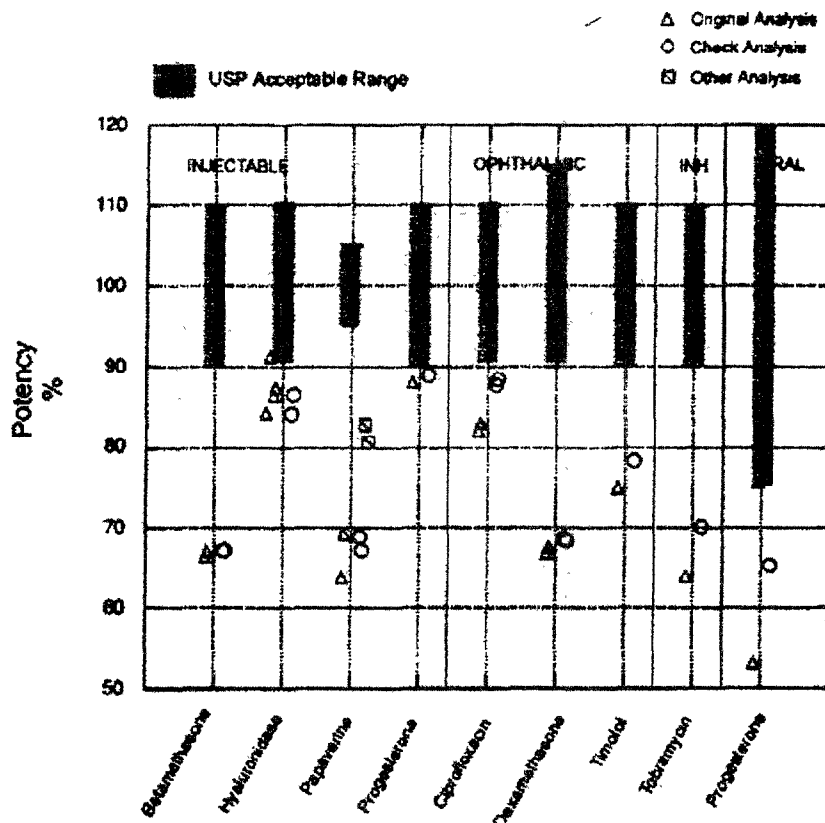


## Results

- 10 / 29 Samples failed
- 9 failed Assay (1 CU)
- all were subpotent
- 1 failed LAL

- Failure by dosage form:
- 5/13 (38%) injectables
- 3/9 (33%) ophthalmics
- 1/1 (100%) inhalation
- 1/4 (25%) oral

### Drugs Failing Assay



## Conclusion

- Sampled drugs showed a significant 34% failure rate. ( $\chi^2 = 12.08$ ,  $p < .001$  compared to zero expected failure rate.)
- Compounded drugs appear to have a much higher "failure" rate than drugs from manufacturers (2%).
- Of those samples that failed assay more than half had a potency of less than 70% of the labeled value.

### Acknowledgements:

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[Back to Top](#)



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